49- Effect of Pectoral Fin Ray Removal on Survival & Estimated Harvest Rate of White Sturgeon

Figure 3. Lower dentition of pacu. *Photograph by Martin R. Brittan.*

Fax 327-2319

The original descriptions of the six nominal species, mostly dating from the early and middle 19th century, are sketchy and based on one or only a few specimens. There have been no recent revisions of the genus and scientific specimens are few, although *Colossoma* are common food fishes in tropical fresh waters of South America. The specimen closely compares to some in the California Academy of Sciences identified by Stanley W. Weitzman and William I. Follett as *Colossoma nigripinnus* Cope. Specimens identified as *Colossoma bidens* had much smaller scales. The senior author tentatively identified the Sacramento specimen as *C. nigripinnus.*

The specimen showed no evidence of disease or parasites. How long it had been in the river is not known, but since pacus and piranhas are generally sympatric and have comparable ecological requirements, some deductions can be made. Temperatures in the Sacramento River were unusually high during summer 1977, a drought year, and between mid-May and mid-October were above 18 C which is approximately the minimum temperature at which most tropical lowland fishes can maintain themselves. Temperatures at which such fishes could comfortably exist occurred between mid-June and mid-September: June 28, 25.1 C; July 28, 24.8 C; August 8, 25.0 C; September 13, 23.3 C. The higher temperatures are within breeding range. During most years midsummer temperatures average about 20–21 C, and in some years run as low as 17–18 C. Mid-winter temperatures range from 6.5 to 9.0 C and would be lethal. Evidence that the fish did not over-winter comes from the scales, which exhibited no growth rings or stress checks.

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